Review of Duke Energy Progress, LLC'S Application for Approval of Rider DSM/EE 12 Docket Number 2020-176-E

South Carolina
Office of Regulatory Staff

October 15, 2020

Executive Summary

In Duke Energy Progress, LLC's ("DEP" or "Company") Application for Approval of Rider Demand Side Management ("DSM") and Energy Efficiency ("EE")-12 ("Rider DSM/EE-12" or "Rider") ("Application"), the Company is seeking recovery of $29,600,282 with $14,866,128 (or 50%) attributed to residential customers and $14,734,154 (or 50%) attributed to general service customers to cover the revenue requirements of Rider DSM/EE-12. This report details the South Carolina Office of Regulatory Staff's ("ORS") findings and recommendations based on its review of the Company's Application, programs, and cost recovery mechanism. Based on its review, ORS finds that the updated Rider DSM/EE-12 was developed in accordance with the terms and conditions set forth by the Public Service Commission of South Carolina ("Commission") in Docket Nos. 2008-251-E and 2015-163-E and is based on reasonable estimates of participation in the Company's programs.

ORS finds that overall, the Company's programs are performing well and achieving higher than forecasted savings. The Company's portfolio, excluding the impact of the Distribution System Demand Response ("DSDR") Program, exceeded forecasted 2019 energy savings by 9%, and achieved 82% of the forecasted peak demand reduction in 2019. The DSDR Program provided an additional system energy savings of 38,083,660 kilowatt-hours ("kWh") and peak demand savings of 218,723 kilowatts ("kW") in 2019. However, two (2) of the Company's programs; the Residential Smart $aver program and the EnergyWise for Business program, are not currently cost-effective, that is, the projected costs exceed the projected savings for each of these programs. ORS recommends that the company incorporate the necessary changes to improve their cost effectiveness.

The current Rider 11 rates approved for 2020 and the Rider 12 rates proposed for 2021 are shown in Table 1 below.

Table 1: Comparison of Current and Requested Rates

DSM/EE Rider	Approved Rider 11 Rate (¢/kWh)	Requested Rider 12 Rate (¢/kWh)	Change to Rider 11 Rate (¢/kWh)
Residential	0.671	0.647	(.024)
Non-Residential	0.722	1.007	.285

If Rider DSM/EE-12 is approved, the monthly bill of an average residential customer using 1,000 kWh per month will decrease by approximately $0.24.

Exhibit 1 (attached) details the development of the requested rates.

Background and Introduction

The Company's South Carolina DSM/EE mechanism was established in the stipulation filed on January 23, 2009 in Docket No. 2008-251-E ("Stipulation") and approved by Commission Order No. 2009-373, dated June 26, 2009. Tariffs for the initial set of DSM/EE programs covered under this mechanism were filed in Docket No. 2009-190-E on May 11, 2009, with the initial proposed cost recovery application filing following in Docket No. 2009-191-E on the same date. The Company's initial cost recovery application covered nine (9) DSM and EE programs, with six (6) programs targeting residential customers, two (2) targeting commercial and industrial customers and one (1) program available to all customers.

The 2009 Stipulation set forth the Company's original DSM/EE mechanism and methodology for recovery of prudently incurred DSM/EE program costs, net lost revenues and a program performance incentive ("PPI") equal to 8% of the net savings for DSM programs and 13% of net savings for EE programs (the "Original Mechanism"). DSM/EE costs were to be amortized over a period not to exceed ten (10) years; net lost revenues were not amortized and were recovered only for the first thirty-six (36) months after the installation of a measure; and the PPI was amortized using a ten (10) year amortization period. Net lost revenues and the PPI were to be trued-up following the completion and review of a program's impact evaluation. Large commercial customers using more than 1 million kWh annually and all industrial customers were eligible to opt out of DEP's DSM/EE programs. Customers that opted out received a DSM/EE credit. All residential customers paid the residential DSM/EE Rider rate. Since the initial cost recovery filing, five (5) additional annual cost recovery applications were approved under the Original Mechanism in Docket Nos. 2010-161-E, 2011-181-E, 2012-93-E, 2013-76-E, and 2014-89-E.

Order No. 2015-596 in Docket No. 2015-163-E approved a new cost recovery and incentive mechanism for DSM and EE programs (the "Revised Mechanism"), to be effective January 1, 2016. Under the Revised Mechanism, DSM/EE costs are to be amortized over a period not to exceed three (3) years, rather than the ten (10) year period used under the Original Mechanism. As in the Original Mechanism, the Company earns a return on unamortized balances at the most recently approved net-of-tax rate of return. Under the Revised Mechanism, net lost revenues are reduced by "Net Found Revenues", which are any increases in revenues resulting from any new activity by DEP that causes a net increase in any customer's demand or energy consumption. The order includes a "Decision Tree" to assist in determining which activities may produce Net Found Revenues. As in the Original Mechanism, net lost revenues are not amortized and are recovered only for the first thirty-six (36) months after the installation of a measure. The Revised Mechanism modifies the PPI to 11.75% of the net savings of the entire DSM/EE portfolio, excluding any low-income programs, education programs, and research and development activities not directly associated with a DSM/EE program. As is the case with DSM/EE costs, the PPI will be amortized over a three (3) year period. The Company is also eligible, under the Revised Mechanism, to receive a $75,000 bonus should it achieve incremental energy savings equal to one percent (1%) of the prior year's retail electricity sales during the five (5)-year period 2015 through 2019. The Company filed the first Application under the Revised Mechanism on September 1, 2015 – the Application for approval of Rider DSM/EE-7 which, with certain modifications, became effective January 1, 2016.

On August 1st of 2016, 2017, 2018 and 2019, the Company filed Applications for approval of updated DSM/EE Riders. ORS, in accordance with the terms of the approved settlement agreement and Commission Order No. 2015-596, conducted a review of DEP's filings and approved the Company's filings with certain adjustments.

On July 31, 2020, the Company filed an application for approval of Rider DSM/EE-12 to become effective January 1, 2021. ORS, in accordance with the terms approved in Commission Order No. 2015-596, conducted a review of DEP's filing. ORS's review included an evaluation of the three (3) major cost components associated with the Company's DSM and EE programs, -- Program Costs, Net Lost Revenues and PPI. ORS audited the Company's costs for the period of January 1, 2019 through December 31, 2019 ("Test Period"). ORS also reviewed the Company's cost estimates for the period of January 1, 2021 through December 31, 2021 ("Rate Period").

DSM/EE Programs

The Company's filing includes a request for cost recovery encompassing twenty-two (22) DSM/EE programs. The programs and the launch dates of each program are shown in Table 2 below:

Table 2: Program Year Timeline

Residential Programs	
Residential Home Advantage Program	01/01/2009
Residential Load Control Program (EnergyWise™)	04/01/2009
Energy Efficient Benchmarking / My Home Energy Report	05/06/2009
Solar Water Heating Pilot	06/01/2009
Residential Smart $aver	07/01/2009
Residential Low Income – Neighborhood Energy Saver	10/01/2009
Residential Lighting	01/01/2010
Appliance Recycling	04/15/2010
Residential New Construction	01/01/2012
Multi Family Energy Efficiency	06/01/2014
Energy Education Program	06/01/2014
Save Energy and Water Kit	11/01/2015
Residential Assessments	03/09/2016
Commercial and Industrial Programs	
CIG Energy Efficiency	05/01/2009
Nonresidential Smart $aver	06/03/2009
CIG Demand Response Automation	05/01/2011
Small Business Energy Saver	11/01/2011
General Service Lighting	04/01/2013
Business Energy Report	12/30/2015
EnergyWise for Business	01/04/2016
Nonresidential Smart $aver Performance Incentive	01/01/2017
Programs for All Customers	
Distribution System Demand Response ("DSDR")	04/01/2008

- The Residential Home Advantage Program was terminated March 31, 2013 because of higher buildings standards and Energy Star standards that went into effect in 2013, making the program no longer cost effective. The program was replaced by the Residential New Construction Program. Due to the amortization period in effect when these program costs were incurred, remaining unamortized program costs and PPI are included in Rider DSM/EE-12.

- The Solar Water Heating pilot is no longer active. Due to the amortization period in effect when program costs were incurred, remaining unamortized costs are included in Rider DSM/EE-12.

- The Company's implementation vendor for the Appliance Recycling Program went into receivership and discontinued operations on November 19, 2015. Although the Company continues to evaluate options with the other vendors that offer appliance recycling, the Company has found that increased costs and required limitations on the program negatively impact the program's viability. The Company does not currently plan to revive this program.

- The Business Energy Report provides a comparative usage report that compares a customer's energy use to their peer groups along with actionable ideas to help them become more energy efficient. The program was launched as a pilot on December 30, 2015, and initial reports were distributed to participants in February 2016. However, after an internal analysis of energy savings and future viability concerns regarding the vendor administering the pilot, the Company terminated the pilot effective August 31, 2017.

- The DSDR Program is not a typical DSM/EE program. It is a system of electric equipment and operating controls designed to enable the Company to reduce peak demand using the distribution system to reduce generation requirements. Included in the system are new line voltage regulators, additional phase wires, the relocation and addition of line capacitors, modifications of tap line configurations, sensors and intelligent controls on equipment and substations, the enhancement of information technology systems, and a new two-way communications system.

- The Company does not earn PPI for the DSDR Program, the Residential Low-Income Program, the Residential Solar Hot Water Pilot, or the Energy Education Program. In addition, under the Original Mechanism, the Company excludes from the PPI computation any programs that do not achieve a Utility Cost Test ("UCT") result of 1.0 or higher. Under the Revised Mechanism the entire portfolio of programs receives a uniform PPI if the portfolio as a whole passes the UCT, which was the case in this docket.

- The 2013 vintages of the Residential Home Advantage, Residential Home Energy Improvement, Residential New Construction, and Small Business Direct Install programs did not meet the UCT threshold and were thus excluded from the PPI computation. In addition, the 2014 vintage of the Residential Home Energy Improvement Program was excluded from the PPI computations on the same basis. For 2016, 2017, 2018 and 2019, even though the Residential Home Energy Improvement Program again failed the UCT, under the Revised Mechanism the entire portfolio of programs receives a uniform PPI if the portfolio as a whole passes the UCT, which was the case. The Non-Residential Performance Incentive Program also failed the UCT for 2019.

- Two (2) programs – the Residential Smart $aver program and the EnergyWise for Business program are projected to fail the UCT for 2021. This means that these programs are not projected to be cost effective. The Company has instituted modifications to the Residential Smart $aver program and projects that the program will become cost effective by 2022. The EnergyWise for Business program will be moved to a "maintenance mode" in 2021, in that no new customers will be added to this program until cost effectiveness can be attained.

Based on information provided by the Company, the programs appear to be performing well overall. The Company found that, excluding the impact of the DSDR Program, the portfolio exceeded the forecasted 2019 energy savings by 9%, and achieved 82% of the forecasted peak demand reduction in 2019. The DSDR Program provided an additional system energy savings of 38,083,660 kWh and peak demand savings of 218,723 kW in 2019.

Table 3 below shows DSM/EE Program Energy Savings, Incentive Program Costs and Non- Incentive Program Costs for Vintage years 2017 - 2019.

Table 3: DSM/EE Energy Savings, Incentive Program Costs, and Non-Incentive Program Costs

Vintage Program Years	Net MWh Savings	Incentive Program Costs	Non-Incentive Program Costs
2017	413,781	$60,629,857	$3,202,406
2018	446,913	$52,401,164	$4,228,530
2019	409,303	$52,678,590	$4,471,879

Chart 1 below shows a graphical representation of the DSM/EE Program energy savings and the associated Incentive Program Costs for Vintage years 2017 – 2019.

Chart 1: DSM/EE Energy Savings and Incentive Program Costs for Vintage Years 2017 - 2019

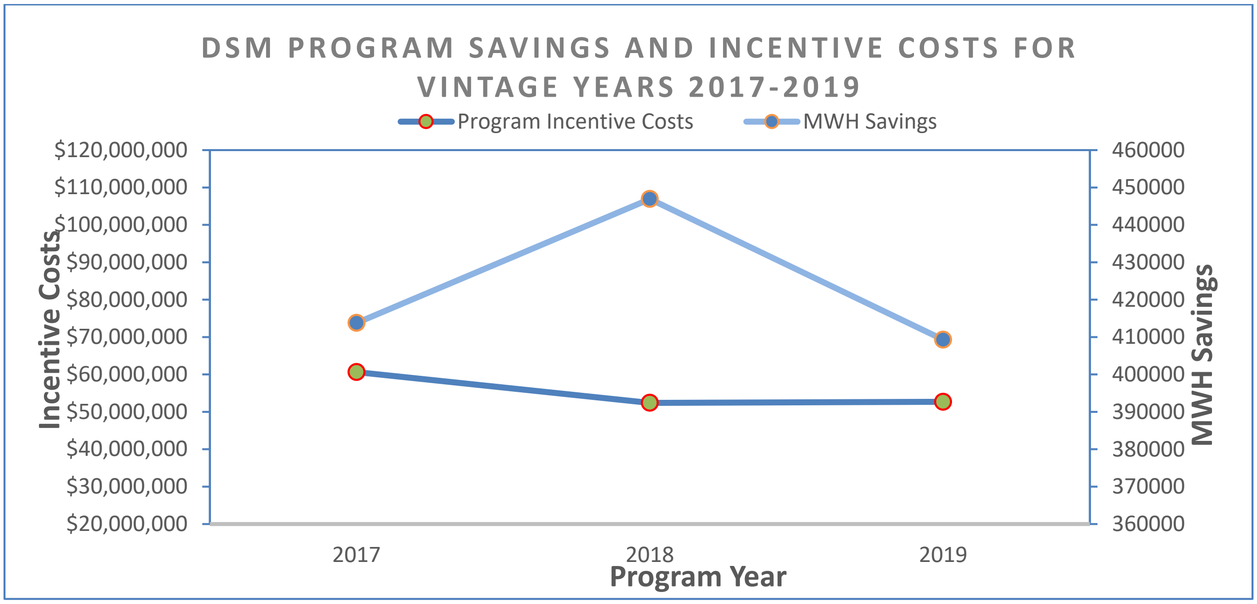
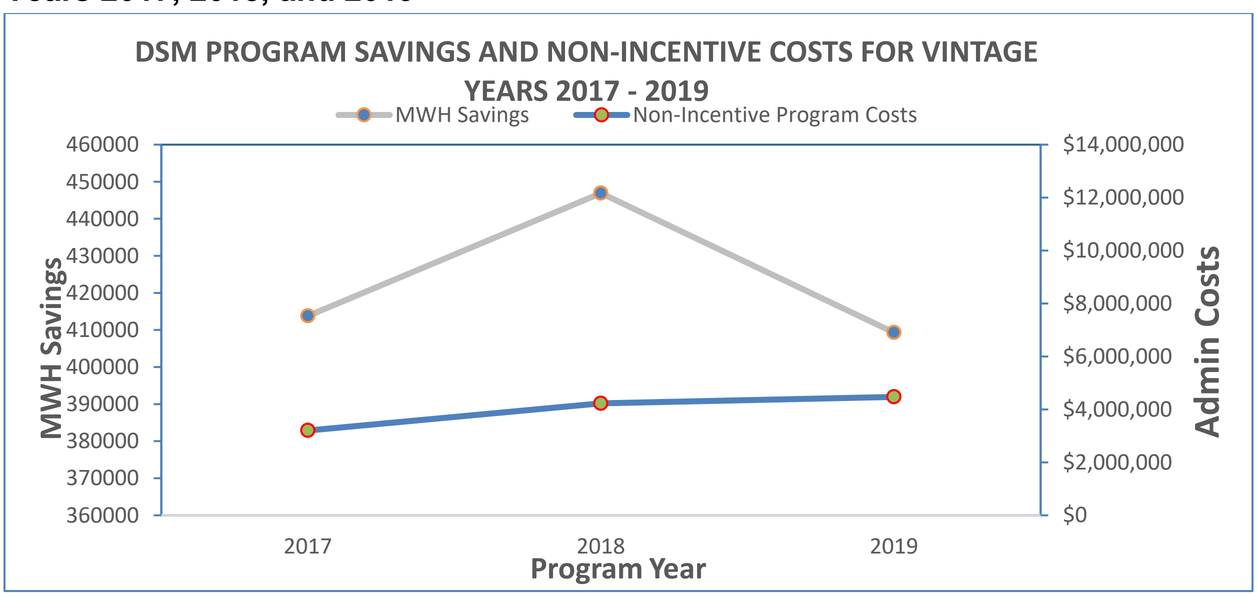


Chart 2 below shows a graphical representation of the DSM/EE Program energy savings and the associated Non-Incentive Program Costs for Vintage years 2017 – 2019.

Chart 2: DSM/EE Energy Savings and Non-Incentive Program Costs for Vintage Years 2017, 2018, and 2019

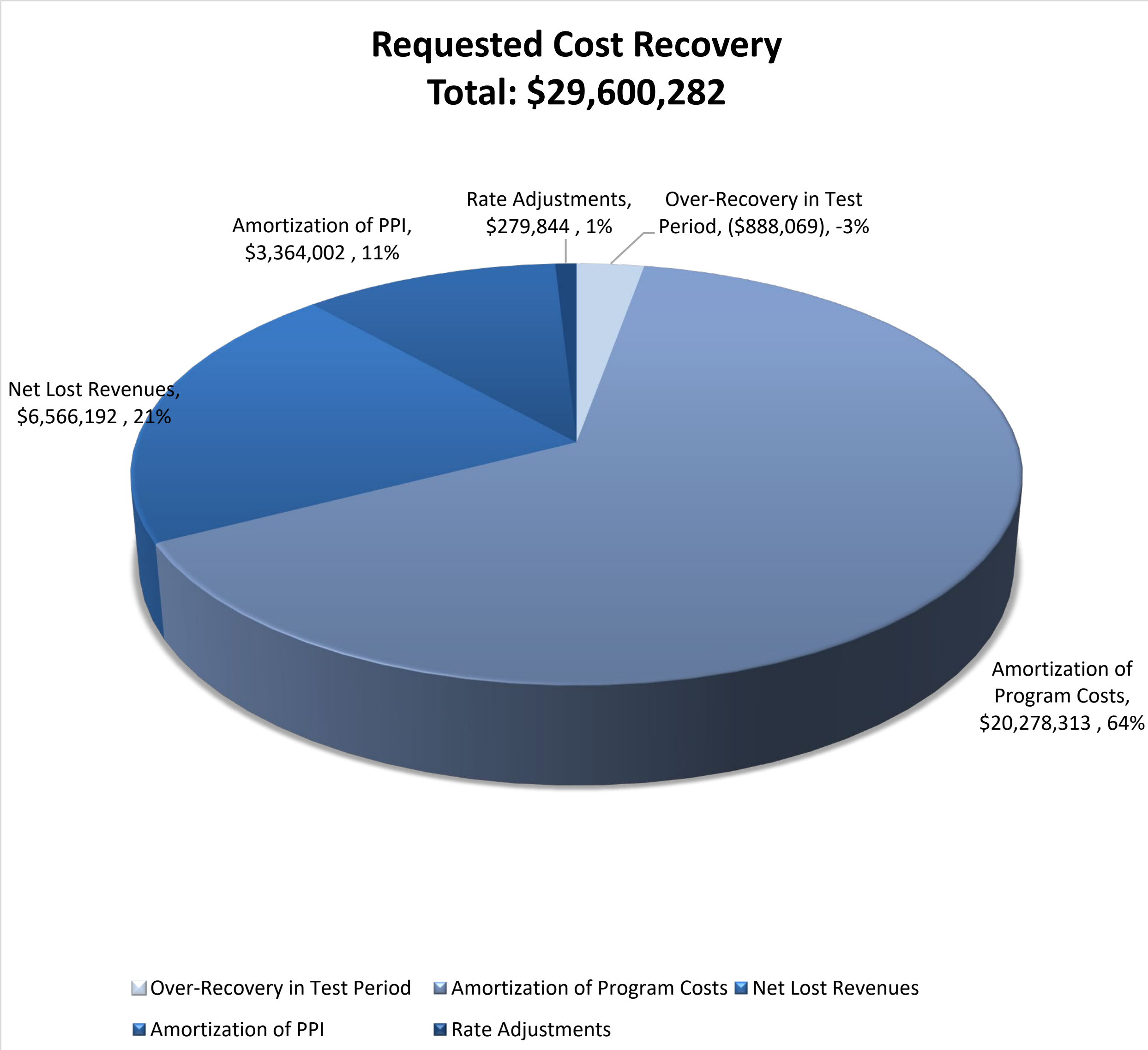


Program Cost Evaluation

The Company's Revised Mechanism allows DEP to amortize certain costs over three (3) years. The total amortized cost for DEP's filing is $29,600,282. This is the dollar amount the Company is seeking to recover in this docket. For this requested amount, the Company projects energy savings of 446,111,659 kWh in 2021, which equates to 6.6 ¢/kWh saved in 2021. Assuming an average five (5)-year life for the measures installed, the lifetime costs average 1.3 ¢/kWh saved.

The total amortized cost of $29,600,282 is comprised of Program Costs, Net Lost Revenues, PPI, over/under collections during the Test Period, and rate adjustments. The Company's Revised Mechanism allows DEP to amortize Program Costs and PPI, with carrying costs, over three (3) years. Program Costs reflect a request of $20,278,313, or 69% of the total amortized cost. PPI, which is associated with savings resulting from the implementation of DSM and EE programs, reflects a request of $3,364,002, or 11% of the total amortized cost. The Company is requesting recovery of Net Lost Revenues in the amount of $6,566,192, or 22% of the total amortized amount, and a reduction of $888,069, or -3% of the total amortized cost to account for an over-recovery of actual program costs during the Test Period. Finally, the Company is requesting $279,844, or 1% of the total amortized amount to recover rate adjustments – RECD adjustment, Gross Receipts Tax and a Regulatory Fee Adjustment. DEP does not amortize Net Lost Revenues, any over/under recoveries from prior periods or the rate adjustments, as they are fully recovered during the Rate Period. The breakdown of the requested cost recovery is shown in Chart 3 below:

Chart 3: Rider 12 Revenue Requirements



A breakdown of the major cost components of this filing and the development of the billing factors is shown in Exhibit 1 of this report. The requested revenues from residential customers are recovered from all residential ratepayers, while the non-residential revenues are recovered solely from those non-residential ratepayers that do not opt-out of the programs.

Advisory Group

The DEP Collaborative Group ("Carolinas Collaborative"), the Company's advisory group concerning DSM/EE matters, meets every other month to discuss the status of each program, including preliminary participation statistics, evaluation, measurement and verification ("EM&V") plans and preliminary EM&V data. The Carolinas Collaborative consists of members from both North Carolina and South Carolina representing all customer classes and a variety of governmental, environmental and commercial interests. The Advisory Group met on January 31, 2019, March 3, 2019, May 3, 2019, July 17, 2019, September 4, 2019, and November 6, 2019. During the meetings, the Company shared program updates along with program challenges, and target audience strategies that are employed to make the DSM/EE programs a success and provided an opportunity for members to participate in discussions on how these modifications may impact participation among the various sectors.

In addition, the Company shared preliminary information on the upcoming Market Potential Study that will examine savings opportunities from theoretical maximum to realistic program potential; evaluating market saturation of various energy efficiency measures, reliable industry data, customer interval and end use data. The results of the study will inform energy efficiency saving potential and Demand Response forecast.

Evaluation, Measurement & Verification

The Company received the following EM&V Reports for the 2017, 2018 and 2019 vintages of DEP's programs:

- 2019 My Home Energy Report Program Evaluation
- 2017 Neighborhood Energy Saver Program Evaluation Report
- 2018-2019 Save Energy and Water Kits Evaluation Report

These EM&V Reports were used by the Company to true-up the 2017, 2018 and 2019 vintages of these programs in this filing.

Estimates Used in the Filing

For the most part, the programs' avoided energy amounts, avoided capacity amounts, net lost revenues, and PPI amounts are estimates that were developed using the DSMore model and the Company's most recent planning data. Thus, nearly all the dollar amounts in the filing, with the exception of the Test Period program costs and the trued-up vintages of certain programs, are estimates. The estimated values and dollar amounts are to be trued-up in future filings, based on EM&V results. ORS is familiar with the DSMore model and finds it to be a reasonable tool for this purpose.

Forecasted Retail Sales

For the computation of rates for this filing, the Company has utilized the spring 2020 forecast of retail sales. ORS is familiar with the methodology used to generate the sales forecast and finds it to be a reasonable approach to establish rates.

Energy and Peak Demand Savings

The Company projects that by the end of 2021 the DSM and EE programs will have reduced annual electric usage by a cumulative 3,353,694 megawatt-hours and will have the capability to reduce the annual one-hour peak usage by 473 megawatts. These are considerable savings and may provide DEP the ability to avoid or defer the construction of additional generating facilities.

Opt-Outs

In its 2019 filing, the Company reported that 172 industrial and commercial customers – representing 65.7% of DEP's industrial and commercial load opted out of the Company's DSM and EE programs. In this filing, the Company reports that, as of December 31, 2019, 216 industrial and commercial customers have chosen to opt-out of its DSM and EE programs. These customers represent approximately 64.3% of DEP's industrial and commercial load.

Rate Impact

The approved rates for DSM/EE Rider-11 and the Company's requested rates for Rider DSM/EE-12 are shown below in Table 4.

Table 4: Comparison of Current and Requested Rates

DSM/EE Rider	Approved Rider 11 (¢/kWh)	Requested Rider 12 (¢/kWh)	Difference (¢/kWh)	Percentage Change (%)
Residential	0.671	0.647	(0.024)	-4%
General Service	0.722	1.007	0.285	39%

The decrease in the residential rate is largely due to a decrease in program costs. The increase in the general service rate is mainly attributable to increases in the true-ups of actual costs incurred previous years.

Conclusion and Recommendations

ORS is encouraged by the overall cumulative energy savings the programs continue to achieve. However, the Residential Smart $aver program and the EnergyWise for

Business program are not cost-effective. ORS recommends that the company incorporate the necessary changes to improve their cost effectiveness.

ORS finds that the updated Rider DSM/EE-12 was developed in accordance with the terms and conditions set forth by the Commission and is based on reasonable estimates of participation in the Company's DSM and EE programs. ORS recommends the approval of the following Rider DSM/EE-12 rates as illustrated below in Table 5.

Table 5: Rate Recommendations

DSM/EE Rider	Requested Rider 12 (¢/kWh)	Difference (¢/kWh)	Percentage Change (%)
Residential	0.647	(0.024)	-4%
General Service	1.007	0.285	39%

If approved, the change in Rider DSM/EE-12 for an average residential customer using 1,000 kWh per month will decrease the customer's monthly bill by approximately $0.24 The Company is requesting the updated rates associated with Rider DSM/EE-12 be effective for bills rendered on and after January 1, 2021.

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DEP Revenue Request for DSM/EE Programs

For the Rate Period of January 1, 2021 - December 31, 2021

	Residential		General Service		Total of EE and DSM Portions		Combined Total
	EE Portion	DSM Portion	EE Portion	DSM Portion	EE Portion	DSM Portion	DSM/EE Total
Rate Period Unamortized Program Costs:							
Estimated Rate Period Program Costs excluding DSDR	$5,964,326	$2,222,994	$3,451,589	$677,632	$9,415,915	$2,900,626	$12,316,541
Estimated Rate Period Program Costs for DSDR	$0	$2,657,828	$0	$1,362,347	$0	$4,020,175	$4,020,175
Total Estimated Rate Period Program Costs	$5,964,326	$4,880,822	$3,451,589	$2,039,979	$9,415,915	$6,920,801	$16,336,716
Program Cost Revenue Requirement for Rate Period							
Amortized Estimated Rate Period Program Costs excluding DSDR	$2,660,109	$740,998	$1,150,530	$225,877	$3,810,639	$966,875	$4,777,514
Estimated Rate Period Program Costs for DSDR	$0	$2,657,828	$0	$1,362,347	$0	$4,020,175	$4,020,175
Prior Period Amortization	$3,994,637	$1,938,418	$2,785,891	$524,642	$6,780,528	$2,463,060	$9,243,588
A&G and Carrying Costs	$1,017,136	$472,884	$601,657	$145,359	$1,618,793	$618,243	$2,237,036
Rate Period Program Cost Revenue Requirement	$7,671,882	$5,810,128	$4,538,078	$2,258,225	$12,209,960	$8,068,353	$20,278,313
Total Revenue Requirement							
Test Period (Over)/Under Recovery as of December 31, 2019	($3,269,335)	($746,201)	$3,871,061	($743,594)	$601,726	($1,489,795)	($888,069)
Rate Period Program Cost Revenue Requirement	$7,671,882	$5,810,128	$4,538,078	$2,258,225	$12,209,960	$8,068,353	$20,278,313
Net Lost Revenues	$3,373,764	$0	$3,190,935	$1,493	$6,564,699	$1,493	$6,566,192
Amortization of PPI	$1,057,525	$771,129	$1,504,800	$30,548	$2,562,325	$801,677	$3,364,002
Gross Receipts Taxes, Regulatory Fees and RECD Adjustment	$186,367	$14,905	$70,306	$8,266	$256,673	$23,171	$279,844
Total Revenue Requirement	$9,020,203	$5,849,961	$13,175,180	$1,554,938	$22,195,383	$7,404,899	$29,600,282
DSM/EE Rate Rider 12							
Total Revenue Requirement	$9,020,203	$5,849,961	$13,175,180	$1,554,938			
South Carolina Rate Class KWh Sales	2,297,701,388	2,297,701,388	1,464,709,742	1,450,248,560			
Rate Riders (Cents/kWh)	0.392575	0.254601	0.899508	0.107219			

	Residential	General Service		
		EE Portion	DSM Portion	Total
DSM/EE Rider 12 (Cents/kWh)	**0.647**	**0.900**	**0.107**	**1.007**